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*भारतीय मानक*

# वस्त्रादि — रंग के पक्केपन के परीक्षण

## भाग ए01 परीक्षण के सामान्य सिद्धांत

*Indian Standard*

# TEXTILES — TESTS FOR COLOUR FASTNESS

## PART A01 GENERAL PRINCIPLES OF TESTING

ICS 677.016.47 : 620.191.73.05

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**BUREAU OF INDIAN STANDARDS**
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

*June* 2007

**Price Group 5**

## NATIONAL FOREWORD

This Indian Standard (Part A01) which is identical with ISO 105-A01 : 1994 'Textiles — Tests for colour fastness — Part A01 : General principles of testing' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Chemical Methods of Test Sectional Committee and approval of the Textile Division Council.

The text of ISO Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In the adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their places are listed below along with their degree of equivalence for the editions indicated:

| *International Standard* | *Corresponding Indian Standard* | *Degree of Equivalence* |
|---|---|---|
| ISO 105-A02 : 1993 Textiles — Tests for colour fastness — Part A02 : Grey scale for assessing change in colour | IS/ISO 105-A02 : 1993 Textiles — Tests for colour fastness: Part A02 Grey scale for assessing change in colour | Identical |
| ISO 105-A03 : 1993 Textiles — Tests for colour fastness — Part A03 : Grey scale for assessing staining | IS/ISO 105-A03 : 1993 Textiles — Tests for colour fastness: Part A03 Grey scale for assessing staining | do |
| ISO 105-A04 : 1989 Textiles — Tests for colour fastness — Part A04 : Method for the instrumental assessment of the degree of staining of adjacent fabrics | IS/ISO 105-A04 : 1989 Textiles — Tests for colour fastness: Part A04 Method for the instrumental assessment of the degree of staining of adjacent fabrics | do |
| ISO 105-A05 : 1989 Textiles — Tests for colour fastness — Part A05 : Instrumental assessment of the change in colour for determination of grey scale rating | IS/ISO 105-A05 : 1989 Textiles — Tests for colour fastness: Part A05 Instrumental assessment of the change in colour for determination of grey scale rating | do |
| ISO 105-B01 : 1994 Textiles — Tests for colour fastness — Part B01 : Colour fastness to light : Daylight | IS 686 : 1985 Method for determination of colour fastness of textile materials to daylight (*first revision*) | Technically Equivalent |
| ISO 105-B02 : 1994 Textiles — Tests for colour fastness — Part B02 : Colour fastness to artificial light : Xenon arc fading lamp test | IS 2454 : 1985 Method for determination of colour fastness of textile materials to artificial light (Xenon lamp) (*first revision*) | do |

(*Continued on third cover*)

## *Indian Standard*

# TEXTILES — TESTS FOR COLOUR FASTNESS

## PART A01 GENERAL PRINCIPLES OF TESTING

## 1 Scope

**1.1** This part of ISO 105 provides general information about the methods for testing colour fastness of textiles for the guidance of users. The uses and the limitations of the methods are pointed out, several terms are defined, an outline of the form of the methods is given and the contents of the clauses constituting the methods are discussed. Procedures common to a number of the methods are discussed briefly.

**1.2** By **colour fastness** is meant the resistance of the colour of textiles to the different agents to which these materials may be exposed during manufacture and their subsequent use. The change in colour and staining of undyed adjacent fabrics are assessed as fastness ratings. Other visible changes in the textile material under test, for example surface effects, change in gloss or shrinkage, should be considered as separate properties and reported as such. Any loose fibres from the specimen adhering to the adjacent fabrics shall be removed before assessment of staining.

**1.3** The methods may be used not only for assessing colour fastness of textiles but also for assessing colour fastness of dyes. When a method is so used, the dye is applied to the textile in specified depths of colour by stated procedures and the material is then tested in the usual way.

**1.4** For the most part, individual methods are concerned with colour fastness to a single agent, as the agents of interest in a particular case, and the order of application, will generally vary. It is recognized that experience and future developments in practice may justify procedures in which two or more agents are combined.

**1.5** The conditions in the tests have been chosen to correspond closely to treatments usually employed in manufacture and to conditions of ordinary use. At the same time, they have been kept as simple and reproducible as possible. As it cannot be hoped that the tests will duplicate all the conditions under which textiles are processed or used, the fastness ratings should be interpreted according to the particular needs of each user. They provide, however, a common basis for testing and reporting colour fastness.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 105. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 105 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 105-A02:1993, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour.*

ISO 105-A03:1993, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining.*

ISO 105-A04:1989, *Textiles — Tests for colour fastness — Part A04: Method for the instrumental assessment of the degree of staining of adjacent fabrics.*

ISO 105-A05:—[1], *Textiles — Tests for colour fastness — Part A05: Method for the instrumental assessment of the change in colour of a test specimen.*

ISO 105-B01:—[2], *Textiles — Tests for colour fastness — Part B01: Colour fastness to light: Daylight.*

ISO 105-B02:—[3], *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test.*

ISO 105-B03:—[4], *Textiles — Tests for colour fastness — Part B03: Colour fastness to weathering: Outdoor exposure.*

ISO 105-B04:—[5], *Textiles — Tests for colour fastness — Part B04: Colour fastness to weathering: Xenon arc.*

ISO 105-B06:1992, *Textiles — Tests for colour fastness — Part B06: Colour fastness to artificial light at high temperatures: Xenon arc fading lamp test.*

ISO 139:1973, *Textiles — Standard atmospheres for conditioning and testing.*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods.*

## 3 General principle

A specimen of the textile to be tested, with adjacent fabric attached if staining is to be assessed, is subjected to the action of the agent in question. The extent of any change in colour and that of any staining of the adjacent fabric are assessed and expressed in fastness numbers.

## 4 Outline of form of the methods

The headings of the principal clauses of the individual test methods are as follows:

"Introduction"

"Scope"

"Normative references"

"Principle"

"Apparatus and reagents" (or "Reference materials and apparatus")

"Test specimen"

"Procedure"

"Test report"

## 5 The "Scope" clause

**5.1** Under this heading in each method are given the intended use of the method, its limitations and the definitions of any terms that may not be clear.

**5.2** Details of the principal natural and man-made fibres which can be submitted to each test are given. These lists are by no means exclusive, and any dyed or printed material not mentioned in the method (whether manufactured wholly from one fibre or from a mixture of fibres) can be submitted to test. In such cases it is necessary to verify and note whether the procedure is likely to cause any alteration in the material under test. This applies particularly to all man-made fibres (acrylic, pure or copolymer; polyvinyl, pure or copolymer; polyester, etc.) currently being developed, of which any list is always likely to be incomplete.

## 6 The "Normative references" clause

Under this heading in each method is given a complete list of other documents which are indispensable for the application of the method.

## 7 The "Principle" clause

Under this heading in each method is given a concise statement of the principle of the method to enable the user to decide whether the method is the one that he is seeking.

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1) To be published.

2) To be published. (Revision of ISO 105-B01:1989)

3) To be published. (Revision of ISO 105-B02:1988)

4) To be published. (Revision of ISO 105-B03:1988)

5) To be published. (Revision of ISO 105-B04:1988)

## 8 The "Apparatus and reagents" (or "Reference materials and apparatus") clause

Under this heading in each method the equipment and supplies required for the test are described.

NOTE 1 For information on the sources of apparatus and reference materials for use in the various parts of ISO 105, apply to the following addresses, enclosing a stamped addressed envelope for reply:

British Standards Institution
389 Chiswick High Road
London W4 4AL
United Kingdom

and

AATCC
1 Davis Drive
P.O. Box 12215
Research Triangle Park
North Carolina 27709-2215
USA

### 8.1 Test solutions

Test solutions shall be prepared using grade 3 water complying with ISO 3696. The concentrations of baths are given in millilitres per litre (ml/l) or grams per litre (g/l). The qualities of chemicals to be used are given in each method. For crystalline substances the amount of water of crystallization is given and, for liquids, the relative density at 20 °C.

### 8.2 Adjacent fabrics

An adjacent fabric is a small piece of undyed cloth of a single or of several generic kinds of fibres to be used during the test for assessing staining.

**8.2.1 Single-fibre adjacent fabrics**, if not otherwise specified, should be of plain weave, medium mass per unit area and free from chemically damaged fibres, finished residual chemicals, dyes or fluorescent whitening agents.

**8.2.2** Properties and preparation of the single-fibre adjacent fabrics are given under the different adjacent fabric specifications.

**8.2.3 Multifibre adjacent fabrics** are made of yarns of various generic kinds of fibres, each of which forms a strip of at least 1,5 cm width providing even thickness of the fabric. The staining properties of generic fibres used in single-fibre and multifibre adjacent fabrics shall be identical. There are two standardized multifibre adjacent fabrics, whose contents differ:

a) Type DW: acetate, bleached cotton, polyamide, polyester, acrylic, wool (see ISO 105-F10);

b) Type TV: triacetate, bleached cotton, polyamide, polyester, acrylic, viscose (see ISO 105-F10).

### 8.3 Standard of fading

By standard of fading is meant a dyed fabric of appearance similar to the test control (see 9.1.3), showing the colour to which the test control should fade during the test. Test controls are produced by a central organization and are made available through national standards bodies.

### 8.4 Selection and use of adjacent fabrics

Two alternative procedures for selection of adjacent fabrics are provided, and details of the type of adjacent fabrics used shall be given in the test report, including dimensions, since there may be differences in test results when multifibre adjacent fabrics are used instead of single-fibre adjacent fabrics.

#### 8.4.1 Types of adjacent fabric

Either of the following procedures may be used.

a) Two single-fibre adjacent fabrics. The first adjacent fabric shall be of the same generic kind of fibre as the material under test or that predominating in the case of blends. The second adjacent fabric shall be that indicated in the individual test or as otherwise specified.

b) One multifibre adjacent fabric. In this case no other adjacent fabric may be present as this can affect the degree of staining of the multifibre fabric.

#### 8.4.2 Dimensions and use of adjacent fabrics

**8.4.2.1** When single-fibre adjacent fabrics are used, these shall be of the same dimensions as the specimen under test (normally 40 mm × 100 mm). As a general principle, each surface of the specimen is completely covered by each of the adjacent fabrics. Special requirements are outlined in 9.3.

**8.4.2.2** When a multifibre adjacent fabric is used, this shall be of the same dimensions as the specimen under test (normally 40 mm × 100 mm). As a general principle, it shall cover the face side only of the specimen. Special requirements are given in 9.3.

## 9 The "Test specimen" clause

### 9.1 General

Under this heading in each method are given the particular requirements for the specimen to be used in the test.

Definitions of the following terms are given below:

— "specimen";

— "composite specimen";

— "test-control specimen".

General directions for their preparation are also given below.

**9.1.1** By **specimen** is meant a small piece of textile material that is to be submitted to the test; it is usually taken from a larger sample representing a lot of the dyed or printed textile material.

**9.1.2** By **composite specimen** is meant the specimen together with one or two selected adjacent fabrics used for assessing staining.

**9.1.3** By **test-control specimen** is meant a specimen of known extent of colour change and/or staining during the test used to ensure that the test is conducted correctly. Details of the preparation of the test-control specimens are given as appropriate in each individual test method. The test-control specimen is treated in parallel with the test specimen under the same conditions, as prescribed in the individual test method.

### 9.2 Preparation of specimens

#### 9.2.1 Fabrics

Specimens of specified dimensions are cut from woven and knitted fabrics, felts and other piece goods. The fabrics shall be free from creases, so that the treatment they receive may result in uniform action over the whole area.

#### 9.2.2 Yarns

Yarns to be tested may be knitted into fabric, from which a specimen is taken. They may also be wound parallel, for example on a U-shaped wire frame. For dry treatments, close winding on a card is recommended. For certain wet treatments without accompanying undyed adjacent material, hanks of yarn tied at both ends may be used.

The method of preparation used shall be specified in the test report.

#### 9.2.3 Loose fibres

Loose fibres may be tested after combing and compressing into a sheet.

#### 9.2.4 Oiled woollen materials

For oiled woollen materials where the oil may be contaminated with a dyestuff, the samples shall be scoured so that they are clean, having an oil content of less than 0,5 % prior to fastness testing, using the following method.

Hand-scour the sample in a solution containing 5 g/l nonionic detergent using a liquor ratio of 50:1 at a temperature between 40 °C and 45 °C for 1 min. Rinse thoroughly using grade 3 water at a temperature between 40 °C and 45 °C. If at the end of the rinsing cycle colour is still visible in the liquor, repeat the rinse procedure until the final rinse liquor is completely clear.

### 9.3 Preparation of composite specimens

**9.3.1** Sewing threads shall be free from fluorescent brightening agents.

**9.3.2** Composite specimens using two single-fibre adjacents:

**9.3.2.1** If the specimen is fabric, it is normally placed between the two adjacent fabrics and sewn along one short side, although for certain methods it is sewn along all four sides.

**9.3.2.2** When testing unions in which one fibre predominates on one side and another fibre on the other side, the specimen shall be placed between the adjacent fabrics so that the predominant fibre is next to the adjacent fabric of the same generic kind of fibre.

**9.3.2.3** If the specimen is a printed fabric, the composite specimen is arranged in such a manner that the face is in contact with half of each of the two adjacent fabrics; depending on the design of the print, more than one composite specimen may be required.

**9.3.2.4** If the specimen is yarn or loose fibre, an amount approximately equal to one-half that of the combined mass of the adjacent fabrics is evenly spread over one adjacent fabric, covered with the other, and sewn around all four sides with additional stitching at about 10 mm intervals; in the case of yarn specimens, this stitching shall be at right angles to the direction of the yarns.

**9.3.3** Composite specimens using one multifibre adjacent:

**9.3.3.1** If the specimen is fabric, it is placed with its face in contact with the multifibre fabric and sewn along one short side.

**9.3.3.2** When testing unions in which one fibre predominates on one side and another fibre on the other side, two separate tests shall be carried out by making two composite specimens so that each side is in contact with the multifibre adjacent fabric.

**9.3.3.3** In the case of multicoloured or printed fabrics, all the different colours of the design shall be tested in contact with all six components of the multifibre adjacent fabric strip. It may be necessary to carry out more than one test.

**9.3.3.4** If the specimen is yarn or loose fibre, an amount approximately equal to that of the mass of the multifibre adjacent fabric is evenly spread over the multifibre adjacent fabric, yarns being laid at right angles to the individual strips. This is then covered with an equal size piece of a lightweight, non-staining quality of polypropylene fabric, stitched along all four sides, and stitched in addition between each pair of adjacent strips comprising the multifibre adjacent fabric.

## 10 Conditioning

**10.1** Special conditioning of specimens and of adjacent fabrics used with them is not usually necessary, but they shall be neither moist nor very dry.

**10.2** For tests in which differences in moisture content of the specimen and adjacent fabric will influence the results, all fabrics shall be in a standard condition, i.e. in moisture equilibrium with air having a temperature of 20 °C ± 2 °C and relative humidity (R.H.) of 65 % ± 2 % (see ISO 139).

NOTE 2 In tropical and subtropical countries, material may be regarded as being in the standard condition when it is in moisture equilibrium with air having a temperature of 27 °C ± 2 °C and R.H. of 65 % ± 2 % (see ISO 139).

## 11 The "Procedure" clause

**11.1** Under this heading in each method are described the series of operations through which the specimen is taken, including the assessment of colour change and staining of adjacent fabrics. The use of test-control specimens is specified in some of the methods to ensure that the tests have been conducted correctly.

**11.2** **Tolerances** are given for numerical values of dimensions, temperatures and times that are considered critical. If no tolerance is given, the precision of the measurements need be only that to be expected when using common instruments and reasonable care. The precision is further indicated by the number of significant figures in the values given.

**11.3** By **liquor ratio** is meant the ratio of the volume of the liquor used in the treatment, expressed in millilitres (ml), to the mass of the specimen or the composite specimen (specimen plus adjacent fabric), expressed in grams (g).

**11.4** **Wetting out**. When wetting specimens, special care shall be taken to ensure that they are uniformly saturated. In particular, when wool or materials containing wool are wetted out, it is necessary for them to be immersed in grade 3 water complying with ISO 3696 and thoroughly kneaded either by hand or with a mechanical device, for example the flattened end of a glass rod.

**11.5** **Spotting**. For tests in which the material is spotted with water or a reagent and the surface rubbed with a glass rod to ensure penetration, care shall be taken not to raise the surface of the material, otherwise there will be a change in the reflection of light and hence in appearance.

**11.6** **Wetting to 100 % increase in mass**. When the material is to be wetted to contain its own mass of liquor, it may be saturated with the liquor and then drawn between two rubber rollers or squeezed by means of a rubber roller on a glass plate, or centrifuged. Wringing by hand does not give uniform wetting.

**11.7** **Temperatures** are given in degrees Celsius (°C), usually with a tolerance of ± 2 °C. For reliable results, continuous temperature control is essential.

## 12 Fastness of dyes

**12.1** As the fastness of a dye depends on the depth of colour, it is necessary to specify standard depths which are to be used by dye manufacturers. A main range of standard depths, referred to as 1/1 standard depths, is recommended in 18 hues and is to be used whenever possible.

**12.2** Supplementary ranges twice as deep (referred to as 2/1 standard depths), and weaker (referred to as 1/3, 1/6, 1/12 and 1/25 standard depths), are also recommended and are to be used whenever additional fastness data are required.

**12.3** In the case of navy blues and blacks, only two standard depths are recommended, namely:

| | |
|---|---|
| Navy blue/light (N/L) | Black/light (B/L) |
| Navy blue/dark (N/Dk) | Black/dark (B/Dk) |

Whenever possible, dye manufacturers' pattern cards shall provide fastness ratings at both depths.

**12.4** These standard depths shall be prepared on a matt material (wool gabardine or printed card). Master sets of the standard depths are filed in certain countries for reference.

**12.5** These standard depths are not subjected to any fastness test, but merely indicate at what depth of colour the fastness figures of dye manufacturers have been obtained, irrespective of dye or fibre.

## 13 Assessment of colour fastness

### 13.1 General conditions

Colour fastness is assessed separately with respect to change in colour of the specimen in the test and with respect to staining of adjacent fabrics. Specimens and adjacent fabrics shall have cooled after drying and shall have regained their normal moisture content before the assessment, except when otherwise specified.

### 13.2 Colour fastness with respect to change in colour

The change which occurs in a test may be a change in lightness, chroma or hue, or any combination of these.

Regardless of the character of the change, the assessment is based upon the magnitude of the visual contrast between the specimen after the test and a specimen of the original material. This contrast is compared visually with the contrast represented by the five or nine pairs of colour chips (or swatches of fabric), ranging in both cases from a rating of 5, which illustrates no contrast, to a rating of 1, which illustrates a large contrast, these scales being specified in ISO 105-A02. The fastness rating of the specimen is that number of the grey scale which corresponds to the contrast between the original and the treated specimens in the case of the nine-step scale; in the case of the five-step scale, if the contrast is judged to be nearer to the non-existent half-step, the appropriate half-step rating shall be given. Assessments to less than one half-step are not permitted. A rating of 5 is given only when there is no difference between the tested specimen and the original material.

In assessing the results of tests for colour fastness to light, the exposed specimens are compared with the scale of eight dyed blue wool reference fabrics, which have been exposed simultaneously. In addition, the grey scale for assessing change in colour is used as a means of defining the extent to which fading shall be carried out in the test (see ISO 105-B01 to B04).

In some tests, changes occur in the surface appearance of the specimen (for example pile arrangement, structure, lustre, etc.) in addition to change in colour. In such cases the surface of the specimen shall be restored, if possible, to its original condition by combing or brushing, etc. If this restoration is not possible, then the fact that the resultant rating gives not only the change in colour but also the overall change in appearance shall be noted in the test report.

For certain types of textile products, a simple wetting can create an apparent difference in colour compared with a fabric which has not been wetted, and this is not due to a real change in colour. This colour difference is due to a modification of the surface of the fabric or to a migration of the finish. In this case, evaluation shall be made by comparison with the original fabric which has been wetted and not with the original fabric. The original fabric, placed horizontally, is wetted superficially and evenly by spraying with distilled water, avoiding formation of drips, and is left to dry. If this procedure has been conducted, details shall be included in the test report.

In case of dispute, carry out instrumental assessment according to ISO 105-A05.

### 13.3 Colour fastness with respect to staining

The degree of staining of the adjacent fabric, either by absorption of dye from the bath or by direct transfer of colour from the specimen, is assessed by visual inspection of the side of the adjacent fabric which was in contact with the specimen; the colour of the bath is ignored if not otherwise specified (for example, in the dry cleaning test).

For assessing staining, the five- or nine-step scale specified in ISO 105-A03 is used in a manner similar to that described for assessing change in colour in 13.2. Staining is assessed for each type of adjacent fabric in the test, staining at the stitching being ignored. If the adjacent fabric undergoes any visual change when subjected to a test in the absence of a specimen, a sample of the adjacent fabric which has been treated in this manner shall be used as the reference sample for the assessment of staining.

In case of dispute, carry out instrumental assessment according to ISO 105-A04.

### 13.4 Influence of pretreatments and after-treatments

It is well known that the fastness of a dyeing obtained with a given dyestuff depends on the amount of dye, the substrate and the treatments applied to the textile material before, during or after dyeing. It follows that fastness is not a property of the dye itself, but only of a given dyeing.

### 13.5 Simple checks on colour fastness

The existence of a simple method of checking the colour fastness of a dyed material by reference to a reference dyeing is extremely useful for authorities receiving goods in large quantities, who wish to determine whether these are comparable with an accepted piece.

Where it is not essential to determine the exact colour fastness rating, if may be sufficient to compare the material being investigated with a standard dyeing. This method is used when it is necessary to establish only whether the colour fastness of the specimen to a particular agent is greater than, equal to, or less than that of the reference dyeing.

## 14 Conditions of viewing and illumination in assessing colour fastness

In assessing colour fastness, a piece of the original material and the tested specimen, or the undyed and stained adjacent fabrics, are arranged side by side in the same plane and oriented in the same direction.

Two or more layers are used if necessary to avoid effects of other backing on the appearance. The appropriate grey scale is placed nearby in the same plane. For optimum precision, the areas of contrast to be compared shall be approximately of the same size and shape; if necessary, this can be achieved by the use of a mask of neutral grey colour approximately midway between that illustrating grade 1 and that illustrating grade 2 of the grey scale for assessing change in colour (that is approximately Munsell N5) and of a size equal to that of the grey scale steps. The surrounding field is the same uniform grey. The surfaces to be compared are illuminated by north sky light in the Northern hemisphere, south sky light in the Southern hemisphere, or an equivalent source with an illumination of 600 lx or more. The light is incident upon the surfaces at an angle of approximately 45°, and the direction of viewing is approximately along the perpendicular to the plane of the surfaces.

## 15 The "Test report" clause

Under this heading in each method is indicated the information to be supplied in the test report. In addition to fastness ratings, information is required to be given on the adjacent fabrics used and any deviations from the test procedure.

## NATIONAL ANNEX A

(*National Foreword*)

The conditioning temperature of 20 ± 2°C as specified in International Standard is not suitable for tropical countries like India where the atmospheric temperature is normally much higher than 20°C. It is almost impossible to maintain this temperature specially during summer when the atmospheric temperature rises even up to 50°C. In view of the above, IS 6359 : 1971 'Method for conditioning of textiles' specifies a temperature of 27 ± 2°C for conditioning of the test specimens for the tropical countries like India. This standard is being followed in testing of textiles and other products since decades.

# NATIONAL ANNEX B

## (*National Foreword*)

## COMMITTEE COMPOSITION

Chemical Methods of Test Sectional Committee, TX 05

| *Organization* | *Representative(s)* |
|---|---|
| Textiles Committee, Mumbai | Dr G. S. Nadiger (**Chairman**)<br>Shri E. Viswambharam (*Alternate*) |
| Bapuji Institute of Engineering & Technology, Davangere | Dr H. L. Vijaykumar<br>Dr K. Murugesh Babu (*Alternate*) |
| Central Institute for Research on Cotton Technology, Mumbai | Dr (Ms) C. R. Raje<br>Dr R. H. Balasubramanya (*Alternate*) |
| Central Pollution Control Board, Delhi | Dr M. Q. Ansari<br>Shri Ajay Aggarwal (*Alternate*) |
| Clariant India Ltd, Mumbai | Dr V. G. Nayak |
| Directorate of Standardization (Production & Supplies), New Delhi | Lt-Col (Dr) R. Srivastava<br>Lt-Cdr B. Manjunath (*Alternate*) |
| In personal capacity (*2 Siddhi Vinayak Cooperative Group Housing Society, Swatantrya Veer Savarkar Marg, Prabhadevi, Dadar, Mumbai*) | Shri M. D. Dixit |
| Indian Institute of Carpet Technology, Bhadohi | Prof (Dr) K. K. Goswami<br>Shrimati Betty Das Gupta (*Alternate*) |
| Indian Jute Industries' Research Association, Kolkata | Shri A. K. Banerjee |
| Jaya Shree Textiles, Rishra | Shri Abhey Nair<br>Shri Pawan Sharma (*Alternate*) |
| L. N. Chemical Industries, Mumbai | Shri Ketan L. Gandhi |
| Maniklal Verma Textile Institute, Bhilwara | Dr N. K. Mathur |
| Man-Made Textile Research Association, Surat | Dr Sandeep R. Naik<br>Shri M. G. Patel (*Alternate*) |
| Ministry of Defence (DGQA), Kanpur | Lt-Col P. P. Naidu<br>Shri Rama Yadav (*Alternate*) |
| Ministry of Defence (R&D), Kanpur | Ms Archana Vyas<br>Ms Priyanka Katiyar (*Alternate*) |
| Office of the Textile Commissioner, Mumbai | Shri R. A. Lal |
| Premier Colorscan Instruments Pvt Ltd, Thane | Shri Raymond Ramrajkar<br>Shri D. I. Desai (*Alternate*) |
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(*Continued from second cover*)

| *International Standard* | *Corresponding Indian Standard* | *Degree of Equivalence* |
|---|---|---|
| ISO 105-B03 : 1994 Textiles — Tests for colour fastness — Part B03 : Colour fastness to weathering : Outdoor exposure | IS 5951 : 1985 Methods for determination of colour fastness of textile materials to weathering by outdoor exposure (*first revision*) | Technically Equivalent |
| ISO 105-B04 : 1994 Textiles — Tests for colour fastness — Part B04 : Colour fastness to weathering : Xenon arc | IS 6152 : 1985 Methods for determination of colour fastness of textile materials to weathering by Xenon arc lamp (*first revision*) | do |
| ISO 3696 : 1987 Water for analytical laboratory use — Specification and test methods | IS 1070 : 1992 Reagent grade water (*third revision*) | do |

The technical committee responsible for the preparation of this standard has reviewed the provisions of following International Standards and has decided that they are acceptable for use in conjunction with this standard:

| *International Standard* | *Title* |
|---|---|
| ISO 105-B06 : 1989 | Textiles — Tests for colour fastness — Part B06 : Colour fastness to artificial light or high temperatures : Xenon arc fading lamp test |
| ISO 139 : 2005 | Textiles — Standard atmosphere for conditioning and testing |

ISO 139 specifies a conditioning temperature of 20 ± 2°C which is unsuitable for tropical country like India. In its place a temperature of 27 ± 2°C as specified in IS 6359 shall be used (*see* National Annex A).

With the publication of this standard, IS 10251 : 1982 'General principles of testing textiles for colour fastness tests', stands withdrawn.

The Composition of technical committee responsible for the preparation of this standard is given in National Annex B.

In reporting the results of a test or analysis made in accordance with this standard, if the final value observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

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## Amendments Issued Since Publication

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